

Exhibit 21

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Sybil P. Parker

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**On the cover: Photomicrograph of crystals of vitamin B₁.
(Dennis Kunkel, University of Hawaii)**

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the family Hylidae characterized by expanded digital adhesive disks. ('trē ,frāg)

tree line *See* timberline. ('trē ,lin)

tree pruning [COMPUT SCI] A strategy for eliminating branches of the complete game tree associated with a given position in a game such as chess or checkers, creating subtrees that explore a limited number of continuations for a limited number of moves. ('trē ,prūn'ij)

tree-ring hydrology *See* dendrohydrology. ('trē ,rīng hī'drālōjē)

trefoil [MATH] A multifoil consisting of three congruent arcs of a circle arranged around an equilateral triangle. ('trē ,fōl)

trellis drainage [HYD] A drainage pattern characterized by parallel main streams and secondary tributaries intersected at right angles by tributaries. Also known as espalier drainage; grapevine drainage. ('trē'lōs ,drānij)

Trematoda [INV ZOO] A loose grouping of acelomate, parasitic flatworms of the phylum Platyhelminthes; they exhibit cephalization, bilateral symmetry, and well-developed holdfast structures. (trem'ətōdə)

trematodiasis [MED] Infection caused by a member of the Trematoda (trematodes). (trem'ətōdī'səs)

Trematosauria [PALEON] A group of Triassic amphibians in the order Temnospondyli. (,trem'əsōrēə)

trembling ill *See* loping ill. ('trem'blīng il)

Tremellales [MYCOL] An order of basidiomycetous fungi in the subclass Heterobasidiomycetidae in which basidia have longitudinal walls. (trem'ə'lālēz)

tremie [ENG] An apparatus for placing concrete underwater, consisting of a large metal tube with a hopper at the top end and a valve arrangement at the bottom, submerged end. ('tremē)

tremolite [MINERAL] $\text{Ca}_2\text{Mg}_5\text{Si}_8\text{O}_{22}(\text{OH})_2$ Magnesium-rich monoclinic calcium amphibole that forms one end member of a group of solid-solution series with iron, sodium, and aluminum; occurs in long blade-shaped or short stout prismatic crystals and also in masses or compound aggregates. ('trem'ōlit)

tremor [GEOPHYS] A minor earthquake. Also known as earthquake tremor; earth tremor. [MED] Involuntary, rhythmic trembling of voluntary muscles resulting from alternate contraction and relaxation of opposing muscle groups. ('trem'ōr)

trench [GEOGR] 1. A narrow, straight, elongate, U-shaped valley between two mountain ranges. 2. A narrow stream-eroded canyon, gulley, or depression with steep sides. [GEOLOG] A long, narrow, deep depression of the sea floor, with relatively steep sides. Also known as submarine trench. (trench)

trench duct [CIV ENG] A metal-lined trough set into a concrete floor with removable cover plates that are level with the top of the floor; used to house electrical connections. ('trench ,dūkt)

trencher *See* trench excavator. ('trench'ər)

trench excavator [MECH ENG] A digging machine, usually on crawler tracks, and having either a movable wheel or a continuous chain on which buckets are mounted. Also known as bucket-ladder excavator; ditcher; trencher; trenching machine. ('trench'ek'skə,vād'ər)

trench fever [MED] A louse-borne infection that is caused by *Rickettsia quintana* and is characterized by headache, chills, rash, pain in the legs and back, and often by a relapsing fever. ('trench ,fēvər)

trenching machine *See* trench excavator. ('trench'īng māshēn)

trench mouth *See* Vincent's infection. ('trench ,mōth)

trench sampling [MIN ENG] A slight refinement of grab sampling in which the ore material to be sampled is spread out flat and channeled in one direction with a shovel, and the material for the sample is taken at regular intervals along the channel. ('trench ,sām'plij)

trench shield [CIV ENG] A movable shoring system consisting of steel plates and braces that are bolted or welded together, used to support the walls of a trench while work is in progress. ('trench ,shēld)

trend [GEOL] The direction of an outcrop of a layer, vein, fold, or other kind of geologic feature. Also known as direction. [STAT] The general drift, tendency, or bent of a set of statistical data as related to time or another related set of statistical data. (trend)

trennschaukel apparatus [ENG] An instrument for determining the thermal diffusion factors of gases and gas mixtures,

consisting of 20 suitably interconnected tubes whose top ends are maintained at the same temperature and whose bottom ends are maintained at the same temperature, with the temperature of the top ends greater than that of the bottom ends. ('tren,shā'kəl ,apə,rad'əs)

Trentepohliaceae [BOT] A family of green algae belonging to the Ultrichales having thick walls, bandlike or reticulate chloroplasts, and zoospores or isogametes produced in enlarged, specialized cells. (,tren'tō,po'lē,ās'ē,ē)

Trentonian [GEOL] A North American stage of geologic time; Middle Ordovician (above Wilderness, below Edenian); equivalent to the upper Mohawkian. (tren'tōnē'ēn)

trepanning tool [MECH ENG] A cutting tool in the form of a circular tube, having teeth on the end; the workpiece or tube, or both, are rotated and the tube is fed axially into the workpiece, leaving behind a narrow grooved surface in the workpiece. (tra'pan'ij ,tūl)

Treponemataceae [MICROBIO] Formerly a family of the bacterial order Spirochaetales including the spirochetes less than 20 micrometers long and less than 5 micrometers in diameter; most species are parasitic. (,trep'ō,nē'mā'tās'ē,ē)

treponematosis [MED] Infection caused by any species of the genus *Treponema*. Also known as treponemiasis. (,trep'ō,nē'mā'tō'sēs)

treponemal *See* treponematosis. (,trep'ō,nē'mā'mī'sēs)

Trepostomata [PALEON] An extinct order of ectoproct bryozoans in the class Stenolaemata characterized by delicate to massive colonies composed of tightly packed zoecia with solid calcareous zoocial walls. (,trep'ō,stō'mēd'ə)

treptomorphism *See* isochemical metamorphism. (,trep'tō'mōr,fiz'əm)

Treroninae [VERT ZOO] The fruit pigeons, a subfamily of the avian family Columbidae distinguished by the gaudy coloration of the feathers. (tra'rōnē,nē)

Tresca criterion [MECH] The assumption that plastic deformation of a material begins when the difference between the maximum and minimum principal stresses equals twice the yield stress in shear. ('tres'kō krī,tirē'ēn)

trestle [CIV ENG] A series of short bridge spans supported by a braced tower. [ENG] 1. A movable support usually with legs that spread diagonally. 2. A braced structure of timber, reinforced concrete, or steel spanning a land depression to carry a road or railroad. ('tres'əl)

trestle bent [CIV ENG] A transverse frame that supports the ends of the stringers in adjoining spans of a trestle. ('tres'əl ,bēnt)

tretamine *See* triethylenemelamine. ('tred'ə,mēn)

Tretothoracidae [INV ZOO] A family of the Coleoptera in the superfamily Tenebrionoidea which contains a single species found in Queensland, Australia. (,tred'ə'thā'rās'ə,dē)

Trevelyan rocker [PHYS] A prismatic metal block having one edge grooved to form two ridges; it vibrates when heated and placed on the grooved edge, providing a simple example of heat-maintained vibrations. (tra'vel'yēn ,rāk'ər)

TRF receiver *See* tuned-radio-frequency receiver. (,tē,är'ef ri,sē'ver)

triacetate [TEXT] A fiber manufactured from cellulose acetate in which 92% or more of the hydroxyl groups are acetylated. (tri'as'ə,tāt)

triacetin [ORG CHEM] $\text{C}_3\text{H}_5(\text{CO}_2\text{CH}_3)_3$ A colorless, combustible oil with a bitter taste and a fatty aroma; found in cod liver and butter; soluble in alcohol and ether, slightly soluble in water; boils at 259°C; used in plasticizers, perfumery, cosmetics, and external medicine and as a solvent and food additive. (tri'as'ə,dāt'ən)

triacytyleoleandomycin [MICROBIO] An antibiotic produced by *Streptomyces antibioticus* and used clinically in the treatment of pneumonia, osteomyelitis, furuncles, and carbuncles. (tri'ə,sēd'ə,ō'lē,ān'dō'mīs'ēn)

triad [COMPUT SCI] A group of three bits, pulses, or characters forming a unit of data. [ELECTR] A triangular group of three small phosphor dots, each emitting one of the three primary colors on the screen of a three-gun color picture tube. (NAV)

See triplet. ('trī,ad)

triad axis [CRYSTAL] A rotation axis whose multiplicity is equal to 3. ('trī,ad ,āks'sēs)

triaene [INV ZOO] An elongated spicule in certain Porifera with three rays diverging from one end. ('trī,ēn)

triage [MED] The process of determining which casualties (as